Isolation shape
(pt and eta dependence)

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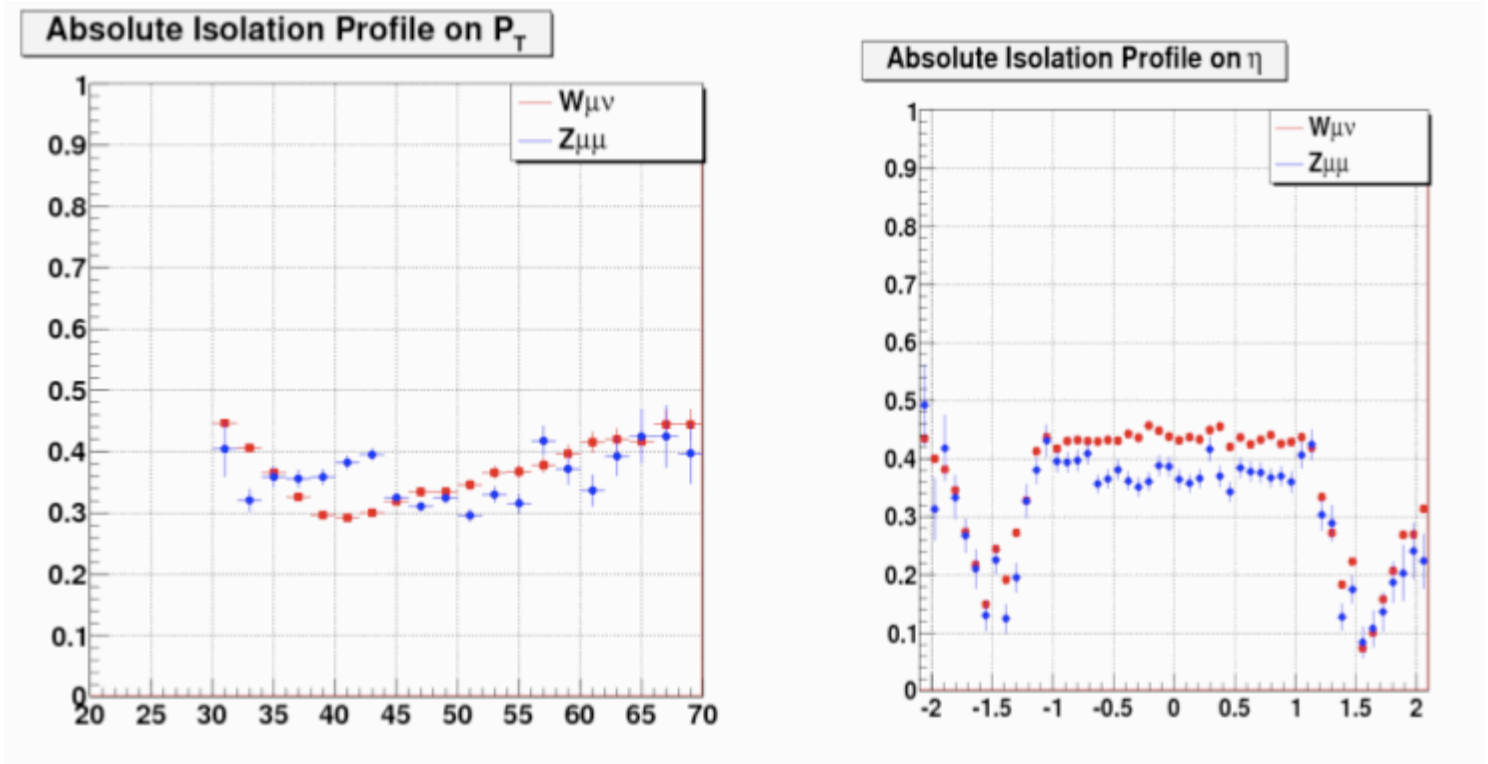
Isolation Shape

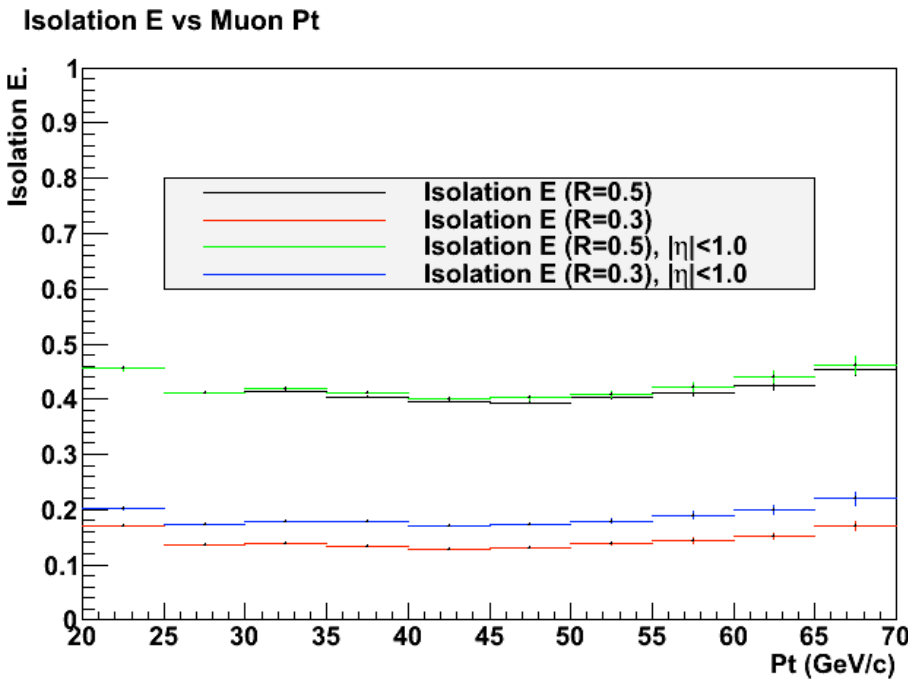
- Pt and Eta dependence
  - Pooja checked isolation profile in Pt and Eta

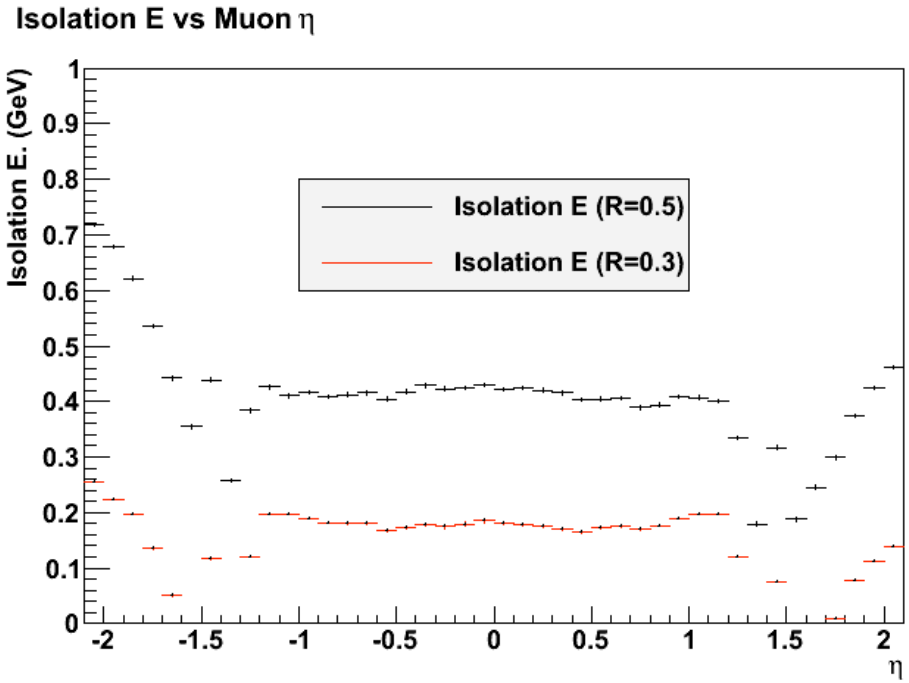


  - We need to study these dependence
    - check isolation profile in isoE<2.0
    - check IsoR03 (LPC standard) and IsoR03fw(CMS standard)

IsoR03 Profile in Pt and Eta (W boson)

- Isolation profile in Pt and Eta (iso<2.0) - IsoR03

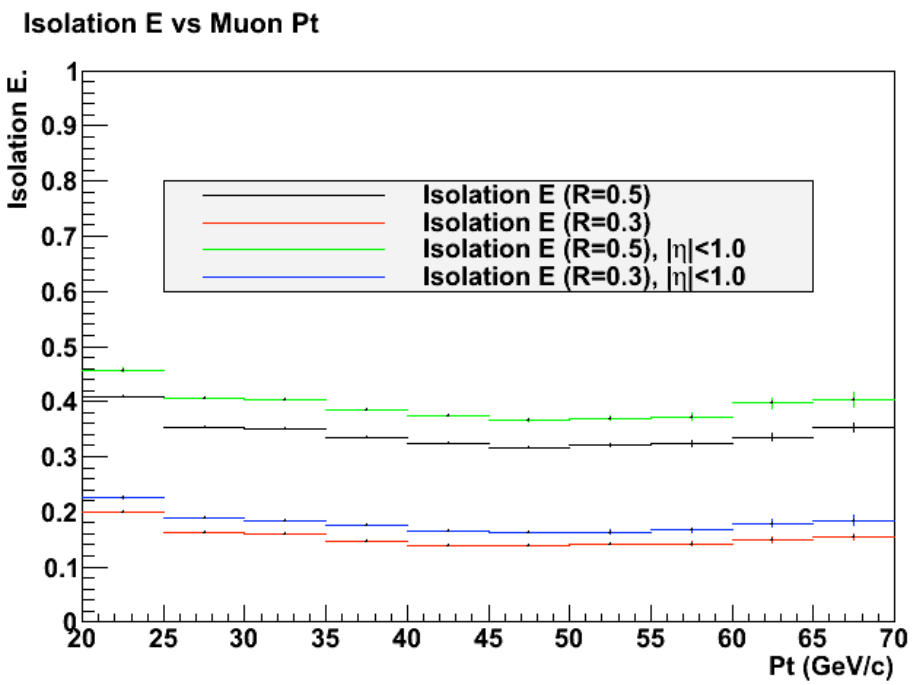


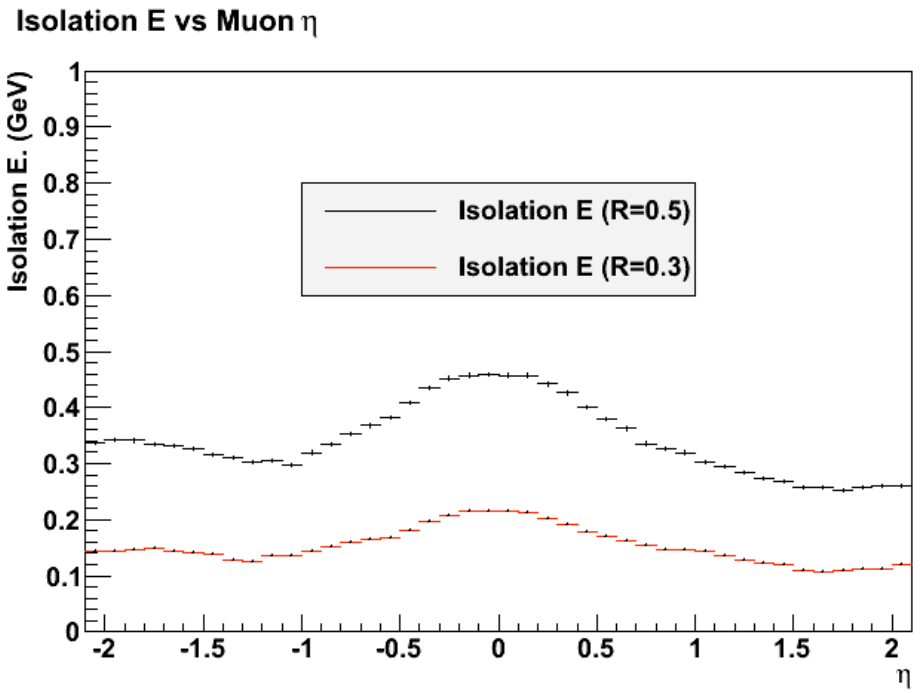


- Pt dependence is very small
- Eta dependence is large and similar structure with Pooja's plot
- IsoR03 is asymmetric between η>1.3 and η<-1.3

IsoR03fw Profile in Pt and Eta (W boson)

- Isolation profile in Pt and Eta (iso<2.0) - IsoR03fw

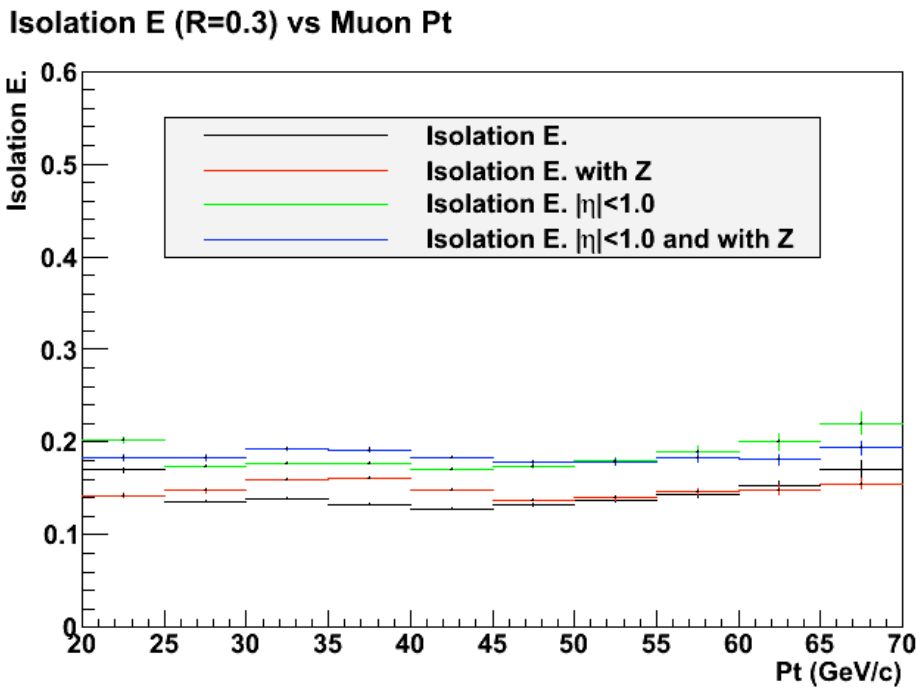


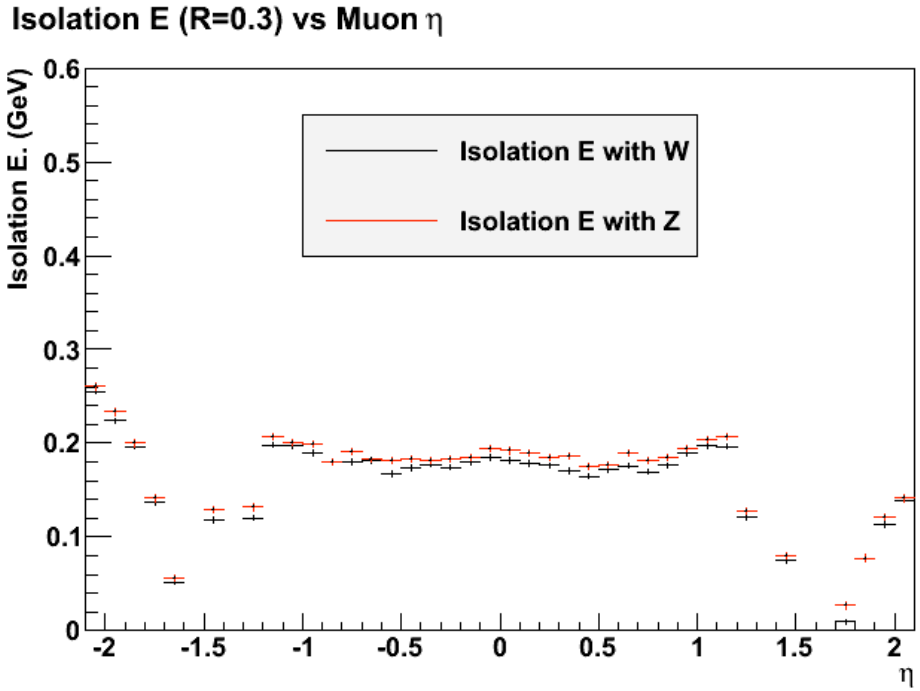


- Iso profile in Pt is relatively flat
- No eta dependence in the endcap region
- IsoR03fw is better to use considering eta dependence
  - need to check what correction makes big eta dependence in isoR03

IsoR03 Profile in W vs. Z sample

- Isolation profile in Pt and Eta (iso<2.0) - IsoR03 : W vs. Z





- Not much difference b/w W and Z sample
  - will check isoE distribution itself, not profile plot

Summary

- IsolationE in Pt and Eta
  - Pt dependence is small
  - IsoR03 has a large eta dependence in the endcap region
  - IsoR03fw is relatively flat compared to IsoR03
  - IsoR03fw is better to use for eta dependence
    - efficiency factor will be canceled out in lepton charge asymmetry
    - isolation shape to measure the background has a issue with isoR03
- Iso shape does not have much difference between W and Z sample
- Need to decide what Isolation variable to use for the measurement